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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,447	09/11/2003	Edward Thomas	S1364-703819	7812
37462 7590 07/24/2007 LOWRIE, LANDO & ANASTASI RIVERFRONT OFFICE ONE MAIN STREET, ELEVENTH FLOOR CAMBRIDGE, MA 02142			EXAMINER FREAY, CHARLES GRANT	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 07/24/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/661,447

Applicant(s)

THOMAS ET AL.

Examiner

Charles G. Freay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-6,9,10,12-15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

This office action is in response to the amendment of May 29, 2007 and the submission of new drawings of June 14, 2007. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.

### ***Drawings***

The drawings were received on June 14, 2007. These drawings are approved.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 6, 9, 10, 12, 14, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al (USPN 5,727,933) in view of Arvidson et al (USPN 5,232,052).

Laskaris et al disclose a fluid feed system/chemical processing facility/fluid dispenser including a positive displacement metering pump (gear pump 22 shown in Fig. 2, positive displacement pumps give approximately constant outputs for each cycle and are thus widely used for metering applications), a positive displacement gear type flow meter (36), and a metering pump controller (34), the controller receives a set point signal (33) and an actual flow rate signal (37) and responsive thereto determines a control signal (41) which directs a cycle rate of the pump (see col. 4 lines 20-24, note also lines 24 - 31 which set forth that the motor is a direct drive motor or it could be other types of motors and which also makes specific reference to the Arvidson et al reference as a possible controller for the direct drive motor). Laskaris et al do not specifically address the type of signal being a series of pulses where each pulse directs the cycle for the metering pump. Arvidson et al, which as noted above is specifically referenced by Laskaris et al, discloses a positive displacement pump (62) driven by a DC motor (80) that receives a signal from a controller drive circuit (42) in the form of a series of pulses (note Figs. 2 and 3 and the discussion from col. 4 line 61 through col. 5 line 21). At the time of the invention it would have been obvious to one of ordinary skill

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in the art to use the control/drive and pulse signal arrangement of Arvidson et al as specifically suggested by Laskaris et al in the pump system of Laskaris et al as a well known DC motor drive technique which provides a wide speed range for the pump.

Claims 5, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al in view of Arvidson et al as applied to claims 1, 9 and 14 above, and further in view of Kurokawa et al (JP 404331955A).

As set forth above Laskaris et al in view of Arvidson et al discloses the invention substantially as claimed but does not disclose that the flow meter is an oval gear flow meter. Kurokawa et al discloses a liquid feed unit having a positive displacement pump (43) and an oval gear flow meter (44) included within the same housing. At the time of the invention it would have been obvious to one of ordinary skill in the art to substitute an oval gear type flow meter such as Kurokawa's for the gear type flow meter of Laskaris et al as an equivalent type positive displacement flow meter which produces a more exact control for the feed unit.

### ***Response to Amendment***

The Declaration under 37 CFR 1.132 filed May 29, 2007 is insufficient to overcome the rejection of claims 1, 2, 4-6, 9, 10, 12-15, 17 and 18 based upon Laskaris et al, Arvidson et al and Kurokawa as set forth either in the last Office action or above because: the declaration establishes a time of some time in 2002 after September 11,

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2002 as a time of disclosure or conception of the invention, but, the applied references were prior art as of May 1998 or earlier.

### ***Response to Arguments***

Applicant's arguments with respect to the claims remaining in the application have been considered but are moot in view of the new ground(s) of rejection. The applicant's arguments center on his position that the references do not disclose a series of pulses driving the motor of the positive displacement pump. As clearly shown in the rejections above pulse driven motors for positive displacement pumps are well known and would have been obvious to use.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Commarmot discloses a positive displacement pump driven by a pulse signal or command.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Charles G Freay  
Primary Examiner  
Art Unit 3746

CGF  
July 20, 2007